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**HIV/AIDS Issues in Alberta:  
The 1992 Survey of Adults**

**Final Report**

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**Prepared for Alberta Health**

**by:**

**John Gartrell, Ph.D  
Thames Group Research**

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**December, 1993**

**Alberta**  
HEALTH

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# **HIV/AIDS IN ALBERTA: 1992 SURVEY OF ADULTS**

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## HIV/AIDS IN ALBERTA: 1992 SURVEY OF ADULTS

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## HIV/AIDS IN ALBERTA: 1992 ALBERTA SURVEY<sup>1</sup>

### 1. SUMMARY

#### 1.1 THE SURVEY

The Alberta AIDS<sup>2</sup> Program, Alberta Health commissioned the Population Research Laboratory (PRL), Department of Sociology, University of Alberta to include questions regarding HIV/AIDS on the 1992 Alberta Survey. Respondents to the 1992 Alberta Survey were asked several questions about AIDS (visual detection, prevention) in order to assess the level of AIDS knowledge among the general public, particularly among those at risk of HIV infection. To follow-up the results of an earlier 1990 PRL Alberta Survey, the 1992 survey sought information about reported HIV testing. Questions also focused on condom use among those who reported having sex with at least one new partner in the two years prior to the survey. Based on the 1990 and 1992 results, this report seeks to provide information necessary to assist in the development of public policy, programs and services for the general Alberta population and for persons with HIV infection or AIDS.

Information was gathered from a representative sample of 1,277 Alberta adults 18 years of age or older. Interviews were conducted by telephone, and a satisfactory completion rate of over 75% was achieved. Completion rates were unaffected by the subject matter and only 1% of the 1,277 respondents did not respond to questions about behaviours which entailed the risk of HIV infection.

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<sup>1</sup> This research would not have been possible without the cooperation of the respondents who generously gave of their time. Phyllis Craig, Keith McLaughlin and Rick McHutchion managed the project for Alberta Health. The Population Research Laboratory, Department of Sociology, University of Alberta conducted the survey and prepared the data for analysis.

<sup>2</sup> At the request of the Alberta AIDS Program, Alberta Health, this report will generally use the term "HIV/AIDS", except where HIV is referenced specifically (in "HIV testing" or "HIV infection"). The term "AIDS" will be used when survey questions are quoted directly, since only the term "AIDS" was used in the survey. The only other place that the term "AIDS" will be used alone is in referring to the Alberta AIDS Program, Alberta Health.



## 1.2 HIV/AIDS RISK

The perceived risk of contracting an HIV infection increased slightly between 1990 and 1992. Slightly fewer respondents (less than 48%, down from 52% in 1990) perceived no risk to themselves. The percent of Albertans who rated their chances of getting HIV/AIDS as "low" increased from 41% to 45%. The proportion who thought their chances of getting HIV/AIDS was medium or high remained at 7%.

Among those who perceived their chance of getting HIV/AIDS as medium or high, most of the reasons given (21% high risk work, 19% widespread prevalence of HIV/AIDS, 14% medical or dental) had little basis in fact. Transmission has been primarily through sexual activity with some through needle sharing.

Eighteen percent of the adults interviewed reported that they were "at risk" (had at least one new sex partner in the two years prior to the 1992 survey, and did not always use a condom; used intravenous drugs; engaged in anal sex; had sexual relations with someone who had done so). This was not significantly different from results observed in the 1990 survey.

The proportion of adults who reported engaging in behaviours which potentially entailed a risk of HIV infection was much lower outside the two large cities (Edmonton 17%, Calgary 18%, versus other 9%). Young, single, male adults were again more likely to report sexual behaviours which potentially entailed a risk of HIV infection. However, the percent of the never married who reported behaviour which entailed a risk of HIV infection decreased from 40% in 1990 to 35% in 1992. The most noticeable decline was for those living common-law. Their rates declined from 38% in 1990 to 13% in 1992.

The majority of risk takers perceived their own risk of getting HIV/AIDS to be low (60%) or none at all (26%). However, those who engaged in sexual behaviours which involved some risk of HIV infection were twice as likely to perceive some chance of getting HIV/AIDS, compared to those who did not engage in these behaviours. Those who engaged in risk behaviour were more aware of the risk in 1992 than they had been in 1990.

### 1.3 KNOWLEDGE ABOUT HIV/AIDS

Since only two knowledge questions were asked, the information collected cannot be considered to be a comprehensive "test" of HIV/AIDS knowledge. Most adults (63 %) knew that "a person can be infected with the AIDS virus and not look sick" (visual detection). Only 31 % thought that condoms were "very effective" at "preventing getting the AIDS virus through having sex" (prevention). Those who correctly answered one HIV/AIDS knowledge question were not more likely to get the other one correct.

Young adults were most likely to know that there was no way to reliably visually detect HIV infection, but young adults were not more likely to know that condoms are effective in preventing HIV infection. As was the case in the 1990 survey, those who knew more about HIV/AIDS were not more likely to report higher risk of getting the HIV virus. Continued efforts are needed to improve HIV/AIDS education in these areas, particularly for those engage in behaviours which place them at risk.

### 1.4 USE OF CONDOMS

In the 1990 survey, only 15% of those with new sex partners consistently used condoms. Forty-five percent of those with new sex partners never used condoms. In addition, there was no significant association between the number of new sex partners and the use of condoms. Even though they were at relatively high risk of HIV infection, over 80% of those who reported four or more different, new partners did not consistently use condoms. Those at greater risk of HIV/AIDS were unlikely to practice safer sex.

The consistent use of condoms among adults with new sex partners increased significantly for the 1992 sample. The percent who reported that they always used condoms increased significantly, from 15% in 1990, to 25% in 1992. The percentage of who never used condoms dropped significantly from 45% to 29%. Even so, in the 1992 sample over three-quarters of those with 4 or more new partners did not use condoms consistently.



There was also a change between 1990 and 1992 in the relationship between the number of new partners and the use of condoms. There was no significant association between risk and condom use for the 1990 sample. In the 1992 survey, those who reported a greater number of new sex partners were more likely to use a condom at least some of the time.

However, the news was not all good. Among those with new sex partners, those who perceived a higher personal risk were not more likely to use a condom. Even those who knew about the effectiveness of condoms in preventing HIV infection were no more likely to use condoms.

About one-third of those who did not use condoms did so because they thought they knew their partners. The next most frequent reasons given were that they used some other method of birth control (they missed the point entirely), that they didn't like condoms, or that they simply didn't think about it. Further research and new educational efforts will be necessary to address these issues.

## 1.5 HIV TESTING

The percentage of the sample who reported that they had been tested for HIV increased significantly from less than 10% in 1990 (including those who expected to be tested), to almost 14% in 1992. Most of those tested said that they did so for their own information (38%), for life insurance (22%), or because they donated blood (17%). Fewer (9%) reported testing on a physician's advice, and this highlights the difference between the HIV antibody test and other medical testing. Most medical testing is done on a physician's advice.

Of those respondents who reported that they had been tested, 83% wanted the results and 77% got them. Most of those (71%) were delivered in person. Only one-quarter of those tested reported that someone talked to them before the test, and only 11% of those tested reported receiving information related to HIV/AIDS education. Only 25% reported that someone talked to them after the test, and only 2% of those tested reported receiving post-test information about HIV/AIDS. While self-reports of counselling are subject to recall bias and other reporting

errors, this was less than one-half the rate (59%) reported in a recent U.S. national survey. Counselling in connection with testing is an area where further research and increased education efforts are clearly warranted. Substantial efforts must be directed towards improving communication between testers (doctors and others) and those tested.

## 2. INTRODUCTION

### 2.1 BACKGROUND

In 1987, the Government of Alberta outlined the foundation for the Alberta AIDS Program in Education and Caring: Alberta's Program for the Prevention, Management and Control of AIDS. Goals of this program included researching the outcomes of prevention, control and treatment of HIV/AIDS, as well as assessment of the impact and effectiveness of prevention and control programming. As part of that research effort, Alberta Health commissioned the inclusion of a number of questions on two sample surveys of Alberta adults. These surveys were carried out in February and March of 1990 and 1992 by the Population Research Laboratory (PRL), Department of Sociology, University of Alberta as part of the annual PRL Alberta Survey. The methods and results of the 1990 survey are summarized in Appendix 1. The present report focuses on results from the 1992 survey.

### 2.2 OBJECTIVES

In 1992, Alberta Health commissioned the PRL to include questions on the Alberta Survey concerning self-assessed HIV infection ("AIDS") risk, knowledge about HIV/AIDS, the use of condoms in preventing HIV/AIDS, and HIV testing. The 1992 survey gathered information necessary to estimate self-assessed risk among a representative sample of Alberta adults and to describe those who reported themselves to be at risk. Through comparisons with 1990 survey results, we can also examine changes in self-assessed risk of HIV/AIDS between 1990 and 1992.

Respondents to the 1992 survey were also asked several questions concerning their knowledge about HIV/AIDS (visual detection, prevention), in order to assess the level of HIV/AIDS knowledge among the general public, and particularly those at risk of HIV/AIDS. To follow-up the results of the earlier survey, the 1992 survey sought more detailed information about reported HIV testing among the general population and about condom use among those who reported having sex with at least one new partner in the two years prior to the survey. This report seeks to provide information necessary to assist in the development of public policy, programs and services for the general Alberta population and for persons with HIV/AIDS.



There were four general objectives of the 1992 study. The first objective was to accurately estimate the extent of self-assessed risk for acquisition of the HIV virus among a representative sample of the general population of Alberta. This included respondents' self-reported behaviours and perceived chances of acquiring HIV. The second objective was to measure the impact of HIV/AIDS education on the related awareness of the general public, so as to assess the possible need for additional or alternative educational efforts. The third objective was to estimate the extent of HIV testing to describe those who had been tested and to find out what information they had received about their tests. How effectively were health personnel using this opportunity to discuss risk reduction? Finally, the survey sought to investigate risk reduction behaviour (condom use) on the part of those adults in the sample who reported behaviours which potentially involved a risk of HIV infection (having had sex with at least one new partner in the two years prior to the survey).

More specifically, who assessed themselves to be at risk of HIV infection and what is the relationship between reported risk behaviour and perceived risk? Has this relationship changed over the two years between the 1990 and the 1992 survey? Is it generally understood that someone can have an HIV infection and you can't see it, and who perceives that condoms are very effective in preventing the transmission of HIV infection? How consistent is condom use among those who reported having sex with at least one new partner in the two years prior to the survey? Are they more likely to know about the detection and prevention of HIV infection, and do they act on that knowledge by using condoms more consistently? Who reported that they had been tested for HIV antibodies, and what reasons did they give for the test? More importantly, what information, particularly about risk reduction, did they receive before and after the test?

## 2.3 LIMITATIONS

The number and complexity of HIV/AIDS-related questions included in the 1992 Alberta Survey by the PRL were constrained by cost and by the need to limit the overall length of the survey questionnaire. The scope and depth of information obtained is therefore limited. Since the 1992 survey questioned an entirely different sample, and since only a limited number of questions were repeated on both surveys, much of the analysis is limited to cross-sectional comparisons at one point in time. Change at an aggregate level for the Province of Alberta as a whole can be assessed for only a limited number of estimates, and changes at the individual level cannot be assessed at all.

The survey design and the size of the sample ( $N=1,277$ ) permit some detailed analysis of data collected from all respondents. However, the relatively small number of respondents who identify themselves as being at risk of HIV/AIDS limits the analysis that can be carried out for this particularly important sub-group.

Reliance on self-report data regarding risk status and HIV/AIDS-related behaviours, without objective criteria against which information could be checked, requires the acceptance of imperfect information. Individuals may have difficulty recalling certain information, they may have difficulty in comprehending the meaning of some questions, or they may be unwilling to respond to sensitive questions about sexual behaviours, for example. As far as possible, questions were drawn from previous surveys, and all items were extensively pretested before the sample was interviewed. However, the information necessary to estimate the validity or reliability of various indicators could not be collected.

If anything, the survey is very likely to underestimate the level of risk taking. Some respondents will forget activities which put them at risk. Also, non-response is likely to be higher among people whose lifestyles make them more difficult to contact and put them at higher risk of HIV/AIDS. In addition, even if they are contacted, some respondents may be reluctant to disclose activities that place them at risk because some of those activities are illegal or, to some people, immoral.

Despite limitations, the 1992 Alberta Survey provides a number of unique insights into HIV/AIDS-related knowledge and behaviours of adult Albertans. Comparisons with 1990 results give an indication of overall change in reported HIV/AIDS risk. In addition, limited comparisons with Canadian (Ornstein, 1989) and U.S. results provide a context within which to interpret results obtained for Alberta.



### **3. RESEARCH METHODS**

#### **3.1 SAMPLING DESIGN**

The sampling design for the PRL Alberta Survey uses a multi-stage sample of residential telephone numbers to select households from within three regions: the city of Edmonton, the city of Calgary and the remainder of Alberta. The sample population includes all persons 18 years of age or older, who, at the time of the survey, were living in a dwelling unit in Alberta that could be contacted by means of direct dialling telephone services. Within households, a quota sample (emphasizing males in order to represent them proportionately) is used to select individuals for interviewing. When they reach an eligible residence, telephone interviewers interview an adult male if one is available, and if not, they interview any available adult female. Females comprised 49.5% of the sample in 1990 and 50.9% in 1992 (Table 1, Appendix 2).

A total of 1,245 usable interviews were completed in 1990, while in 1992 the total was 1,277. In 1990 the response rate was 75% for Edmonton, 75% for Calgary and 80% for the remainder of Alberta. In 1992 the response rate was 74% for Edmonton, 76% for Calgary and 78% for the remainder of Alberta. Response rates over 70% are generally considered quite acceptable. The re-weighted sample was set proportionate to the (1991 census) population, so that the Edmonton cluster contained 25% of the sample, Calgary contained 28% and the rest of non-metropolitan Alberta had 47% of the interviews.

#### **3.2 HIV/AIDS-RELATED QUESTIONS**

The telephone interview used in the 1992 survey contained a separate section of HIV/AIDS-related questions at the end of the interview. A copy of these questions is contained at the end of Appendix 2. Question 80 asked respondents to rate their own chance of getting HIV ("AIDS") as "high, medium, low, or none" (subjectively perceived risk). Question 87 asked people if they had sex with at least one new partner in the last two years, with follow-up question (87b to 90) asking the number of different partners, sex of partners, whether or not the respondents and his or her partner(s) always used a condom, and why they didn't always use one, if that was the case. Respondents who were judged to be at risk of getting HIV/AIDS

through sexual contact were identified as those who reported one or more new partners, and also reported that they or their partners did not always use a condom.

A third way of identifying those at risk asked respondents if, since the early 1980's, they had injected drugs, taken part in anal sex, or had sex with anyone who had injected drugs or had taken part in anal sex (question 91). This question was not asked of the whole sample. It was directed only to those who reported at least one new sex partner in the two years prior to the survey. The information is therefore of limited utility because it identifies only those with previous high risk behaviours who also had new sexual relationships.

### **3.3 REFUSAL RATES**

Refusal rates for the interview as a whole were similar for the surveys which included the HIV/AIDS questions and those in other years which did not. Less than 1% of the respondents gave no response to the questions which asked about new sexual partners and self-identification as engaging in high risk behaviours for HIV infection. These were potentially the most sensitive questions. For the knowledge question about (visual) detection and prevention (condom use) of HIV infection refusal rates were .3% and .2% respectively. We conclude that the general public has accepted the discussion of issues relevant to HIV infection and AIDS.

### **3.4 DATA ANALYSIS AND PRESENTATION**

Independent, classification variables included location, age, gender, marital status and age. As noted above, a "risky sex" variable was constructed to identify respondents who reported at least one new sex partner in the two years prior to the survey, and also reported that they did not always use condoms. This sub-group was at risk for exposure to sexually transmitted HIV infection.

Throughout this report cross-tabulations were percentaged to add up to 100% within categories of the independent variables. Tables are then read by comparing across categories of the independent variables. For each table, the probability ascertained for a chi-square test of significance of the null hypothesis of "no association" is reported in the form " $p =$ ". When

p is less than .05, this conventional level of significance indicates that we can reject the null hypothesis of no association (observed differences are due to the random chance involved in sampling). We can infer that there is likely to be an association in the population from which our representative sample was drawn.

All missing data are omitted from the tables. Marginal percentage distributions are indicated in the first table in which a particular variable is reported. Total sample size figures are reported for each table to allow readers to recalculate the frequencies if they so desire. A more complete discussion of research methodology for the 1992 survey is reported in Appendix 2.



#### 4. THE RISK OF HIV/AIDS

Sexual activity has been the most common means of transmission for HIV infection in Alberta. Approximately 90% of the cases of HIV infection reported in the province have been linked to unsafe sexual practices. Complacency about the risk of HIV infection has been a major problem among Albertans, and many Albertans do not consider themselves to be at risk of acquiring HIV. If Albertans are to adopt lifestyles which reduce the likelihood of infection with HIV, they must first perceive the possibility of infection as a real threat to their personal health. They must also appreciate the risk posed to the health of those with whom they engage in risk behaviours.

Respondents to the 1992 survey were classified as at risk from sexual contact if they reported at least one new sex partner in the two years prior to the survey, and they did not always use a condom. Those who reported at least one new sex partner in the two years prior to the survey were also asked if one of the following statements was true for them at any time since the early 1980's: "you had injected drugs or shot up, including steroids, during that time; you took part in anal sex; it is likely that any person with whom you had sex, has previously injected drugs, including steroids." This identifies a sub-group of the sexually active who were at high risk of contracting HIV. Those who were not sexually active were not asked this question.

All respondents were also asked to rate their chances for getting HIV/AIDS as "high, medium, low or none". This measure provides an indicator of perceived risk of HIV infection. Respondents' risks of acquiring HIV/AIDS were therefore measured in two different ways: as indicated by their self-reports of sexual behaviours which entailed risk of HIV infection, and as perceived chances of getting HIV/AIDS.

#### 4.1 WHO REPORTS HIV/AIDS RISK?

The percentage of respondents who reported having a new sex partner in the 2 years prior to the survey increased from 18% in 1990 to 19% in 1992 (Table 1). This increase was not significant ( $p > .05$ ). Among those who had a new partner, the average number of partners also increased from 3.07 (standard deviation = 5.37) in 1990, to 3.28 (standard deviation = 4.24) in 1992. This increase also was not significant ( $p > .05$ ).

Despite the small increase in the percentage of those who had new sex partners, the percentage of those who had engaged in sexual behaviour which entailed some risk of HIV infection decreased slightly between 1990 and 1992. In the 1992 sample, 14% had engaged in "risky sexual behaviour", that is, having at least one new sex partner in the two years prior to the survey and not always using a condom. As reported in Table 1, this was a slightly lower than the 15% reported for the 1990 survey. This decrease was not significant ( $p > .05$ ).

The perceived risk of getting an HIV infection (the "AIDS virus") increased slightly between 1990 and 1992 (Table 1). This change was significant ( $p < .05$ ). The most notable change was an increase from 41% to 45% in the proportion of respondents who rated their chances of getting an HIV infection as "low". There was a decrease of a similar magnitude in the percent of those who said they had no risk from 52% to 48%. However, the overall picture was much the same as it had been in 1990. Only a small percentage thought that their chances of getting HIV/AIDS was "medium" or "high" (7% in 1990, 7% in 1992), and most respondents thought they had little chance of getting the virus.

Most people thought they were safe (low risk or no risk) because they were married (16%), monogamous (21%), or celibate (9%). The second most popular reason that people thought they were safe was that they thought that getting HIV/AIDS was simply a matter of chance and unlikely to happen to them. This reason was given by 12% as a first reason and by 25% of those who gave a second reason. A further 15% of the 533 respondents who gave a second reason cited one of these. Over one-half of the respondents mentioned one of these three factors.

**Table 1. HIV/AIDS Risk**

		1990	1992
1. New Sex Partner	%	17.8	18.7
	N	1237	1264
2. Risky Sex	%	15.0	13.8
	N	1234	1263
3. Perceived Risk*	% High	1.8	1.7
	% Medium	5.1	5.3
	% Low	40.7	45.4
	% None	52.4	47.8
	% Total	100.0	100.2
	N	1,220	1,263

1. New Sex Partner in two years prior to the 1992 Survey.

2. Risky Sex (Behaviours): Reported at least one new sex partner in the two years prior to the survey and did not always use a condom.

3. Perceived Risk: Self-rated chances of getting HIV infection.

\*4. Differences between 1990 and 1992 are significant ( $p < .05$ )

As a first reason they were safe, only 2% said that they practised "safe sex" or used condoms, and a further 4% said they were "careful". A further 4% of those who gave a second reason cited "safe sex" or "condoms".

Among the few respondents who perceived their chances of getting HIV/AIDS as medium or high ( $N=89$ ), there were 63 who gave a reason for their assessment. The most frequently cited reason was high risk work (21%). Yet there have been no documented cases to date of HIV transmission to or from a health care worker in Canada. A further 19% simply attributed their chances to the widespread prevalence of HIV/AIDS. HIV is not in fact widespread in



Alberta, and in any event HIV is not spread by casual contact. Prevalence itself is not a factor without risky behaviour. A further 14 percent attributed their perceived medium or high risk to medical or dental treatment. Again, this is not a significant source of HIV infection.

Eighteen percent said they didn't know their partners, and 11% attributed their medium or high risk to sexual activity (theirs or their partners). In total, only 29% of the respondents who perceived themselves to be at medium or high risk of HIV infection identified what might be considered to be an "appropriate" or "plausible" reason. Only 18 respondents gave a second reason.

Location differences for the 1992 sample followed a pattern very similar to that observed in 1990 (Table 2). The proportion of the adult population who reported engaging in sexual behaviour which entailed the risk of HIV infection was much lower in the areas outside the two large cities, Edmonton and Calgary, and the differences were significant. Further analysis of the non-metropolitan results indicated that of the 15% who lived in a city other than Edmonton or Calgary, 12% reported sexual behaviour which entailed the risk of HIV infection (Table 1, Appendix 3). Among those who lived in towns and villages (17% of the total sample) 9% reported sexual behaviour which entailed the risk of HIV infection, and among those from rural areas (14% of the total population) 8% reported this behaviour. Location differences in perceived risk of getting HIV/AIDS were not significant in either 1990 or 1992. The pattern for perceived risk of getting HIV/AIDS did not follow the pattern for sexual behaviour which entailed risk of HIV infection.

Gender differences in sexual behaviour which entailed the risk of HIV infection increased somewhat between 1990 and 1992, due principally to a drop in the percentage of female respondents who reported this risk (Table 2). Among male respondents, 18% reported sexual behaviour which entailed the risk of HIV infection in 1992, up slightly from 17% in

Table 2. Location Gender and Age Differences in Reported HIV/AIDS Risk  
(Alberta 1990, 1992)

	Total	Location			Percent Gender		Age (Yrs.)				
		Ed.	Calg	Other	M	F	18-29	30-39	40-54	55+	
1. Sex Risk											
1990	15.0	19.4	19.0	10.1	16.9	13.0	30.8	14.9	9.9	2.0	
		p = .000*									
1992	13.8	17.1	17.9	9.5	17.6	10.1	28.4	11.4	10.6	2.7	
		P = .000*									
2. Perceived Risk											
1990	1.8	1.6	2.0	1.8	1.5	2.2	1.4	1.3	3.2	1.3	
High	5.1	4.8	6.6	4.4	4.2	6.0	5.5	6.3	5.3	2.7	
Med	40.7	40.6	36.8	43.0	44.0	37.3	46.6	44.9	39.9	27.7	
Low	52.4	53.0	54.6	50.8	50.3	54.6	46.5	47.4	51.6	68.3	
None		P = .548									
		p = .067									
1992	1.7	2.2	1.2	1.8	2.1	1.3	2.6	1.4	.9	2.0	
High	5.3	6.2	5.3	4.8	5.4	5.2	6.5	5.5	4.7	4.3	
Med	45.4	44.1	49.4	43.7	46.9	43.9	53.1	48.4	47.3	27.6	
Low	47.8	49.7	44.1	49.7	45.6	49.5	37.7	44.7	47.1	66.1	
None		p = .549									
		p = .415									
		p = .000*									

1. Sex Risk: reported at least one new sex partner in the two years prior to the survey and did not always use a condom.

2. Perceived Risk: self-rated chances of getting HIV.

3. \*p < .05

1990. Among female respondents, 10% reported this sexual behaviour in 1992, down from 13% in 1990. Gender differences in perceived risk of getting HIV/AIDS were not significant in either sample. Again, the pattern of gender differences in perceived risk of getting HIV/AIDS was not the same as the pattern of gender differences in sexual behaviour which entailed the risk of HIV infection.

These levels of risk are similar to those observed for a representative sample of Canadian males (Ornstein, 1989:35). Compared to the Canada-wide estimates Ornstein gives for females, both 1990 and the 1992 Alberta samples were more likely to report new partners. While there is still some gender bias in reporting within the Alberta samples, that bias is not significant and is not nearly as large as Ornstein observed.

Age differences in sexual behaviour which entailed the risk of HIV infection were still quite marked in 1992, but not quite so marked as they had been in 1990 (Table 2). Young adults 18 to 29 years of age were still by far the most likely to report this kind of sexual behaviour, but their rates decreased marginally from 31% in 1990 to 28% in 1992. This represents less than a 10% decrease. Survey respondents between 30 to 39 years of age were less likely to report this behaviour (11% in 1992 down from 15% in 1990), and this represented a decrease of 27% over the earlier figure. Those between 40-54 years of age reported similar rates to the next younger cohort (10.6%), with a much lower percent for the oldest cohort, 55 years of age and older (3%). Rates for both these latter age groups had increased slightly between 1990 and 1992.

Age differences in perceived risk followed this same general pattern in both 1990 and 1992, and differences were significant in both samples. Older respondents were more likely to perceive lower risk in both samples ( $\text{Gamma} = .23$ ). Differences in perceived risk were most evident for the oldest age grouping and for those who perceived no risk of getting HIV/AIDS.

Marital status and education differences in sexual behaviour which entailed the risk of HIV infection, and perceived risk of HIV/AIDS are reported in Table 3. Marital status differences in sexual behaviour which entailed the risk of HIV infection continued to be significant in 1992. Married and widowed respondents were the least likely to report this behaviour in both the 1990 and 1992 samples. The never married, those living common-law, the divorced and the separated were much more likely to report sexual behaviour which entailed risk of HIV infection. For the never married the relative



frequency of these behaviours decreased from 40% to 35%. The most noticeable decline was for those living common-law, from 38% in 1990 to 13% in 1992.

Marital status differences in perceived risk of getting HIV/AIDS continued to be significant in 1992, and the pattern of differences generally followed that observed for sexual behaviour which entailed risk of HIV infection. The married and widowed respondents continued to be the most likely to perceive no risk, and the never married continued to be the most likely to perceive risk. Still, in the 1992 sample, the perception of medium or high risk among the never married, divorced and separated respondents was very low. It was a combined 9% for the never married, 11% for the divorced, and 15% for the relatively few respondents who were separated.

Education differences in sexual behaviour were more pronounced in the 1992 survey than they were in 1990 (Table 3). In both surveys, the pattern of effects was curvilinear. In the 1992 results, those who did not finish high school were least likely (9%) to report risky sexual behaviour. Those who had completed high school were more than twice as likely (18%), while the percentage dropped slightly for those who had some post-secondary education (16%) and more markedly for those who had completed a university degree (11%).

There was a weak overall tendency for higher education to be associated with lower perceived risk of HIV/AIDS ( $\text{Gamma} = -.12$ ), but the pattern was not monotonic. While there was little pattern in high risk, the percent who perceived medium risk decreased with educational level from 6% for those with less than grade 12, to 4% for those with university

**Table 3. Marital Status, Education and Reported HIV/AIDS Risk (Alberta 1990, 1992)**

	Total	Marital Status (Percent)					Education (Percent)				
		N.M.	Mar.	C.L.	Div.	Sep.	Wid.	<H.S.	H.S.	H.S. + Univ.	
1. Sex Risk											
1990	15.0	39.7	1.7	38.1	44.2	38.4	1.4	12.3	18.5	18.5	13.2
				p = .000*					p = .058		
1992	13.8	34.7	1.9	13.2	31.6	37.2	8.0	8.9	17.8	15.7	10.5
				p = .000*					p = .005*		
2. Perceived Risk											
1990	1.8	3.2	1.2	.9	1.0	3.2	5.7	.8	3.5	1.3	1.5
High											
Med.	5.1	9.6	3.7	2.1	7.9	8.4	3.8	3.8	5.8	3.8	6.0
Low	40.7	51.2	38.6	45.0	48.1	39.7	12.3	35.7	36.5	47.9	43.0
None	52.4	36.1	56.5	51.9	43.0	48.7	78.2	56.9	54.2	46.9	49.5
				p = .000*					p = .019*		
1992	1.7	1.4	2.0	.9	.8	3.0	1.1	2.2	1.1	2.2	.4
High											
Med.	5.3	8.0	3.8	1.9	9.9	11.7	1.4	6.5	5.3	5.0	3.9
Low	45.4	57.3	41.3	55.7	45.9	37.3	30.6	33.8	46.8	47.8	55.8
None	47.8	33.0	52.9	41.5	43.4	47.9	67.0	57.5	46.9	45.0	39.9
				p = .000*					p = .001*		

1. Sex Risk: reported at least one new sex partner in the two years prior to the survey and did not always use a condom.

2. Perceived Risk: self-rated chances of getting HIV.

3. \*p < .05.

degrees. Similarly, the percent who perceived no risk decreased from 58% for those with less than grade 12, to 40% for those with university degrees. On the other hand, the percent of those who perceived that they had low risk of getting HIV/AIDS increased from 34% for those with less than grade 12 education to 56% for those with university degrees.

#### **4.2 REPORTED RISK STATUS AND PERCEIVED RISK OF HIV/AIDS**

Do those who have taken part in activities with a risk of HIV infection (e.g. intravenous drug users, anal sex) and those who have engaged in "risky sex" (sex with a new partner without at condom) perceive themselves to be at higher risk of getting HIV/AIDS? The association between self-assessed risk status, sexual behaviour which entailed risk of HIV infection and perceived risk of HIV/AIDS is reported in Table 4.

There was only a very slight tendency for those who engaged in high risk practices in the 1990 survey to perceive themselves at higher risk of getting HIV/AIDS. The association was not significant. In the 1992 survey, the question pertaining to self-identification as having engaged in activities which have a high risk for HIV/AIDS was only asked of those who reported a new sexual relationship. Responses are thus not directly comparable between the two surveys. Because of this added condition, this more restricted sub-group in 1992 was probably at higher risk than those similarly identified in 1990. Those respondents to the 1992 survey who engaged in high risk behaviours were much more likely to perceive a higher risk of getting HIV/AIDS. This imperfect comparison suggests that people who engaged in high risk behaviours were perhaps more aware of their HIV/AIDS risk in 1992 than they were in 1990.

There is a positive association between engaging in sexual behaviour which entailed risk of HIV infection (sex with a new partner without always using a condom) and perceived risk of getting HIV/AIDS in both the 1990 and the 1992 surveys. In the 1992 survey, those who

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<sup>a</sup> Sexual orientation was not determined. Both heterosexuals and homosexuals are included.



**Table 4.                      Reported Risk Status and Perceived Risk of HIV/AIDS\*  
(Alberta 1990, 1992)**

				Perceived Risk of HIV/AIDS (Percent)				
Reported	N			High	Medium	Low	None	Total
High Risk	39	1990	Yes	1.9	9.8	53.1	35.2	3.1
	1193	p=.150	No	1.8	5.0	40.3	52.9	96.9
	26	1992	Yes	10.6	22.3	53.5	13.6	2.2
	209	p=.000 *	No	1.5	4.9	45.2	48.4	97.8
N								
Risky Sex	185	1990	Yes	1.2	12.4	56.6	29.9	15.0
	1049	p=.000 *	No	1.9	3.8	37.8	56.4	85.0
	174	1992	Yes	2.1	11.7	59.7	26.4	13.8
	1089	p=.000 *	No	1.7	4.3	43.1	51.0	86.2

\* Percentages add to 100% across (compare down). 1992 High Risk identification was asked only of respondents who reported a new sex partner in the two years preceding the survey. Sex Risk includes those who reported new sex partners (one or more) and did not always use a condom.  $P < .05$  designated by an asterisk (\*).

reported sexual behaviour which entailed risk of HIV infection were almost twice as likely as those who did not report this kind of behaviour to perceive at least some chance that they would get HIV/AIDS (74% versus 49%). However, 86% of those who had engaged in sexual behaviour which entailed risk of HIV infection perceived their risk of HIV/AIDS to be low (60%) or none at all (26%).

## 5. KNOWLEDGE ABOUT HIV/AIDS

In his 1988 nation-wide survey of HIV/AIDS knowledge, Ornstein (1989) observed the highest levels of knowledge in Alberta. In the 1990 Alberta survey, respondents were asked questions that tested a fairly sophisticated (questions 76a and 76b, Appendix 1). The majority (56%) of the sample gave an acceptable answer to the question: "in your estimation, what percentage of people who now have the AIDS virus will eventually get sick with AIDS?". Acceptable answers were either "50-89%" or "90-100". On balance, the proportion of those who appeared to be familiar with the relationship between seropositivity and the likelihood of developing AIDS only slightly exceeded the proportion of those who were either misinformed (24%) or uninformed (19% didn't know).

One half of the respondents knew that "less than 10%", the 'tip of the iceberg' of those who now have HIV are now sick with AIDS. This lack of information may lessen perceived personal risk and may lead some people to underestimate the possible future magnitude of the HIV/AIDS epidemic in Alberta.

### 5.1 KNOWLEDGE ABOUT DETECTION AND PREVENTION

Everyone in the 1992 sample was asked two new questions about HIV/AIDS. The first question asked if the respondent thought the following statement was "definitely true, probably true, probably false, or definitely false: A person can be infected with the AIDS virus and not look sick." Results are reported in Table 5. The "correct" answer, "definitely true", was chosen by 63% of the sample.<sup>4</sup> Only 4% said that they did not know or did not respond. The remaining 32% did not know the correct answer to this question.

**Table 5.** Knowledge About HIV/AIDS  
(Alberta, 1992)

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<sup>4</sup> Since the questions asked in 1992 differed substantially from those asked in 1990, this does not necessarily indicate an improved understanding of HIV/AIDS. The question asked in 1990 was much more difficult.

Panel A					
Individuals Can Have HIV/AIDS And Not Look Sick (p = .000)	Condom Effectiveness of Preventing HIV (Percent)				
	Very	Somewhat	Not	NR/DR	Total
Definite	65.4	65.3	59.5	19.7	63.4
Probable	26.9	29.8	27.8	48.1	29.5
Not	29.0	56.0	6.8	8.3	2.8
NR/DR	5.0	2.4	8.0	26.0	4.3
Total	30.6	61.7	4.0	3.7	N=1277

\*The table is arbitrarily percentaged within columns.

Panel B			
Can't See HIV/AIDS (p = .036)	Condom Effectiveness (Recoded)* (Percent)		
	Know	Don't Know	Total
Know	67.0	61.1	63.4
Don't Know	33.0	38.9	36.4
Total	39.2	60.8	N = 1277

\*"Know" includes condom "somewhat effective" and reason attributed to human error.



The second question asked: "how effective do you think the use of a condom is to prevent getting the AIDS virus through having sex?". The response of "very effective" was accepted as a correct answer. A response of "somewhat effective" was also scored as correct if the respondent went on to specify human error as the reason why he or she thought that the condom was not "very effective". Those who chose "very effective" comprised 31% of the sample, and an additional 9% said that condoms were "somewhat effective" and chose human error as the reason. No matter how this item was scored, most respondents did not think that condoms were effective in preventing HIV infection.

Relatively few of the 62% of respondents who thought that condoms were "somewhat effective" based that opinion on the idea that human error in their use was responsible. Most simply said that "nothing is foolproof" (28% of those who answered) or attributed problems to what might be broadly classified as material defects. Of those who gave reasons, 38% chose reasons for ineffectiveness such as condoms breaking, ripping, defective, or constructed of poor quality material.

The cross-tabulation of answers to the two knowledge questions included in the 1992 survey is reported in Table 5. There is a significant association between knowing about prevention and knowing about visual detection. However, the percentage differences in Panel B are small. Knowing the prevention question answer was only associated with a 6% improvement in knowing the visual detection answer. This difference was significant only because the sample size was large. In the 1990 survey this relationship was actually negative ( $\text{Gamma} = -.20$ ) when responses to both questions were ranked on correctness (Appendix 3, Table 2). If a respondent gave a "more correct" answer to one question, he or she was then likely to give a "less correct" answer to the other one.

## **5.2 WHO KNOWS ABOUT HIV/AIDS**

In his 1988 survey of 1,259 Canadians, Ornstein (1989) observed that younger respondents knew significantly more about HIV/AIDS, but that the difference between 18 and 44 year old respondents was not large. He also observed significant differences in HIV/AIDS

knowledge by marital status. The never-married had the highest levels of HIV/AIDS knowledge and the widowed had the lowest. Those with higher levels of education knew more, and males and females were not significantly different.

Socio-demographic differences in HIV/AIDS knowledge about the visual detection of HIV/AIDS are reported in Table 5 for respondents from the 1992 survey. Those who lived in the metropolitan areas of Edmonton or Calgary were equally likely (65% and 65% respectively) to give the correct answer to the visual detection question ("a person can be infected with the AIDS virus and not look sick"). Respondents from non-metropolitan areas were less likely to give the correct answer (61%), but location differences were not significant. Males were a little more likely to know that people with HIV/AIDS don't necessarily look sick, but the gender difference in knowledge was not significant. Age differences were large and significant with those in the two young cohorts, 18-29 and 30-39 years of age, quite likely to know that HIV/AIDS cannot be visually detected (70% and 73%, respectively). Respondents 40-54 years of age were less likely to know this information (64%), and those 55-91 years of age were least likely to know it (40%). This pattern parallels that for the age distribution of HIV/AIDS risk in both 1990 and 1992 (Table 1). In other words, the age cohorts that have the highest risk of HIV infection also have the highest level of knowledge about the difficulty of visually detecting those who are infected by HIV.

In the 1992 survey, some marital status differences in knowledge about visible detection were large and overall differences were significant. Over three-quarters of the common-law respondents gave the correct answer, as did 68% of the never married and 66% of the separated. Knowledge about the lack of visible signs of HIV/AIDS was a little lower for the married (63%), and knowledge was lowest by far for the widowed (35%).

Again, the pattern of distribution of this kind of knowledge about HIV/AIDS followed the pattern of the distribution of risk of HIV/AIDS from sexual contact. As noted previously, in the 1990 survey common law respondents showed a relatively high percent of sexual behaviour that entailed risk of HIV infection.

In the 1990 survey 38% of those living common-law reported a new sex partner and did not always use a condom (Table 2, above). By 1992, this had dropped sharply to 13%. The never married, divorced and separated were all more likely than the married or widowed respondents to have engaged in sexual behaviour which entailed risk of HIV infection.

As expected, the percentage of correct answers to the detection question in the 1992 survey increased as the level of education increased, from 46% for those with less than high school education to 78% for those with a university degree. This pattern of differences does not correspond to that observed for those who had engaged in sexual behaviour which entailed risk of HIV infection (Table 3). Education differences for this question in 1992 were much more marked than those observed for the 1990 survey. In the earlier survey, those who were more educated were not more likely to give the best answers. Nor were they less likely to give mis-information.

Knowledge about the effectiveness of condoms was scored in two different ways. Most simply, the correct answer was that condoms were very effective in preventing the transmission of HIV during sexual intercourse. Results for this indicator are reported in Table 7 in row 1 for each socio-demographic factor. The tests of significance reported for this indicator are calculated for the complete table cross-tabulating the two variables. In order to simplify the presentation only the percent of correct responses is reported in Table 6.

The second definition includes the idea that condoms may not always be "very effective" because people make errors in using them. The closest response to "very effective" was "somewhat effective". If it was combined with a response indicating human error in the follow up question about why condoms were not very effective, this too was coded as a correct response. This indicator is reported in Table 7 as row 2 for each of the socio-demographic factors.

As noted above (Table 5), respondents were less likely to know the condom's effectiveness in preventing HIV/AIDS, than they were to know that individuals with



**Table 6. Socio-demographic Factors and HIV/AIDS Knowledge (Alberta 1992)**

People With HIV/AIDS Don't Look Sick (Percent Correct)						
Location	Edmonton		Calgary		Other	
	65.1		65.2		61.3	
Age (Yrs.)*	18 – 29		30 – 39		40 – 49	
	70.3		72.9		64.0	
Gender	Male			Female		
	65.1			61.8		
Marital Status*	N.M.	Mar.	C.L.	Div.	Sep.	Wid.
	68.1	62.7	75.8	62.8	66.4	35.1
Education*	< H.S.		H.S.		Post Sec.	
	45.6		63.6		68.6	
					Univ.	
					77.9	

\*p < .05 with tests calculated for the complete tables.

HIV/AIDS don't necessarily look sick. Even with the more encompassing definition that included allowance for human error in the use of condoms, only 39% of the sample gave a correct answer.

Location differences for both constructions (1 and 2) of this type of HIV/AIDS knowledge were not significant. Age differences were significant for the more restrictive definition. These differences were not in the distribution of correct responses, which are very similar (Table 7). The significant difference were in the distribution of incorrect, don't know and non-responses which were not reported in Table 7. Similar percentages of each

**Table 7. Socio-demographic Factors and HIV/AIDS Knowledge (Alberta 1992)**

		Know Condom Effective in Prevention (Percent Correct)					
Location		Edmonton		Calgary		Other	
p = .615	1.	30.9		33.6		28.7	
p = .452	2.	37.9		41.9		38.2	
Age (Yrs.)		18 - 29		30 - 39		40 - 49	
p = .000*	1.	30.9		30.1		30.4	
p = .670	2.	36.9		41.5		39.0	
Gender		Male		Female			
p = .008*	1.	34.9		26.5			
p = .155	2.	41.2		37.2			
Marital Status		N.M.	Mar.	C.L.	Div.	Sep.	Wid.
p = .000*	1.	34.1	29.9	32.2	29.5	33.6	20.7
p = .577	2.	39.1	39.8	43.9	35.8	41.1	30.1
Education		< H.S.		H.S.		Post Sec.	
p = .000*	1.	28.0		29.3		29.9	
p = .011	2.	34.9		37.4		39.0	

1. Condom very effective in preventing HIV/AIDS.

2. Adds condom "somewhat effective" because human error to # 1.

\*p < .05

NOTE: The percentages in this table are given only for the correct responses. The probability levels reported for the Chi-squares were calculated for the complete tables with all of the responses to the knowledge question (including incorrect answers, don't know, and non-response).

age category gave the correct answer. Gender differences for the more restrictive definition were significant. Relatively more males gave the answer "very effective" (35% compared to 26% for females).

For the more restrictive definition of correct knowledge, marital status differences were significant. In general, marital status differences in knowledge about prevention were relatively small, with only the widowed having an appreciably lower percentage. Education was the one variable where there was a systematic pattern. The percent of correct responses increased with level of education for both definitions of correct knowledge about condom use.

### **5.3 HIV/AIDS RISK AND KNOWLEDGE ABOUT HIV/AIDS**

In the 1990 survey, respondents who were identified as at relatively high risk for acquiring HIV were more likely to give mis-information in response to the HIV/AIDS knowledge questions. They were also less likely to admit that they did not know the answer, and they were not more likely to give the best answers. Persons who were at a greater risk for HIV infection were somewhat less likely to be knowledgeable about the relationships between HIV infection and the likelihood of developing AIDS.

Were those who had a higher risk of HIV/AIDS more likely to respond correctly to the two items asked of the 1992 sample? The relationship between reported HIV/AIDS risk and HIV/AIDS knowledge for the 1992 sample is given in Table 7. The two knowledge questions are represented across the top of the table (including the more inclusive version of the prevention question on condoms). The HIV/AIDS risk variables down the left hand side of the table are defined by successively greater risk. "Risky sexual behaviours" are defined as before (at least one new sex partner and did not always use a condom). "High risk sexual behaviour" includes only those who reported more than one new sex partner and did not always use a condom. This focus on those with two or more new relationships eliminates people who began a single new stable relationship. It therefore categorizes people who may have been monogamous in their sexual behaviour in the recent past (including those who got married) as being at lower risk. The third high risk classification includes those who reported a new sex partner, did not always



use a condom and in addition reported (intravenous) drug use, anal sex, or sex with someone who engaged in either of these behaviours. This third classification of risk therefore identifies a sub-set of the first classification who have engaged in at least two different types of risky behaviour.<sup>5</sup>

Those who had put themselves at risk of HIV infection through their sexual behaviour (at least one new partner and did not always use a condom) were significantly more likely to give the correct answer about visually detecting HIV/AIDS (Table 8, column 1). Over three-quarters (77%) of those at higher risk knew the answer, while 61% of those at lower risk gave the correct answer.

Those who reported sexual behaviour which entailed risk of HIV infection were slightly more likely (32% versus 30%) to say the condoms were very effective (Table 7, column 2). However, when the more inclusive definition of knowledge about condom effectiveness was used (column 3, Table 7), those who reported sexual behaviour which entailed risk of HIV infection were actually less likely to give the correct response.

The second risk variable in Table 8, "repeated risky sex", is defined as having two or more new partners and not always using a condom. This classifies new monogamous sexual relationships as "not at risk" even if the respondent reports not always using a condom. Again, those who reported sexual behaviour which put them at greater risk of HIV infection were significantly more likely to know the information about the visual detection of

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<sup>5</sup> Only those people who reported a new sex partner in the two years prior to the survey were asked the question about other types of risk behaviour (needle drug use, anal sex, or sex with someone who had done either). Therefore, this third categorization of risk ("multiple types of risk" identified in Table 8 does not include those people who were needle drug users, had anal sex, or had sex with someone who had done either of these behaviours but had not begun a relationship with a new sex partner in the two years prior to the survey.

**Table 8.                      Reported HIV/AIDS Risk and HIV/AIDS Knowledge  
(Alberta, 1992)**

HIV/AIDS Risk		<i>Percent Correct</i>		
		1. Can't See AIDS	2. Condom Very Effective	3. Condom Effective and Human Error
1. Risky Sex	Yes	76.8	32.1	37.8
	No	61.3	30.4	39.4
		p < .05*	p < .05*	p > .05
2. Repeated Risky Sex	Yes	77.1	31.7	39.5
	No	61.9	30.5	39.1
		p < .05*	p > .05	p > .05
3. Multiple Risk Types	Yes	82.6	50.3	52.9
	No	63.0	30.2	38.9
		p > .05	p > .05	p > .05

1. Risky Sex: Reported at least one new sex partner in the two years prior to the survey and did not always use a condom.
2. High Risky Sex: Reported more than one new sex partner in the two years prior to the survey and did not always use a condom.
3. Multiple Risk Types: New sexual relationship and one of drug use (needle), anal sex or sex with someone with these characteristics.

\* Significant differences are starred. Significance is based upon the complete cross-tabulation using the 4 knowledge categories by the two risk categories.

HIV/AIDS (77% versus 62%). They were not more likely to know that condoms were very effective in preventing HIV infection.

The third definition of HIV/AIDS risk ("multiple risk types") identifies those respondents who reported a new sex partner and who, in addition, also identified themselves as having engaged in other high risk activity (intravenous drug user, participant in anal sex, or had a sexual relationship with someone who might likely have engaged in either of these practices). This small number of individuals who had engaged in several different kinds of high risk behaviour were highly likely (83%) to know the correct information about the identification of HIV/AIDS. They were also more likely to know the information about condoms, although, because of the small number of respondents involved (28) these differences were not significant. Still, from the point of view of HIV/AIDS education, it is encouraging to note that at least these differences were in the "right" direction. Those at (multiple types of) risk were more likely to know that "AIDS can't be seen" and that condoms are very effective in preventing HIV transmission.

What kind of relationship was there between HIV/AIDS knowledge and the perceived risk of HIV/AIDS? Were those who knew more about HIV/AIDS more likely to see a higher probability that they would get it themselves? Table 9 shows that there was a significant relationship between HIV/AIDS knowledge and perceived risk of HIV/AIDS. For the visual detection question, those who gave the correct answer were more likely to report that they had low risk rather than no risk at all. Those who knew that the condom was very effective were more likely to report that they had no risk of getting HIV/AIDS rather than a low risk. This pattern was not much different when the definition of correct information for the condom question was expanded. In general, the relationship between knowledge and perceived risk was significant (in part because the sample was large). However, effects were small and there was no consistent pattern to the relationship between HIV/AIDS knowledge and perceived risk.

**Table 9. HIV/AIDS Knowledge and Perceived Risk of HIV/AIDS  
(Alberta, 1992)**

HIV/AIDS Knowledge	Perceived Risk of HIV/AIDS (Percent)			
	High	Medium	Low	None
1. Can't see HIV/AIDS				
Correct	1.8	5.0	48.6	44.7
Not Correct	1.6	5.8	39.7	52.9
	p < .05*			
2. Condom Effective				
Correct	2.7	5.2	40.4	51.7
Not Correct	1.3	7.6	47.5	43.6
	p < .05*			
3. Condom Very or Somewhat Effective and Human Error				
Correct	2.7	4.7	42.4	50.2
Not Correct	1.1	5.7	47.3	45.9
	p < .05*			

\* The chi-square for the complete 4 by 4 crosstabulation is significant at the .05 level.



## 6. THE USE OF CONDOMS

For those who reported a new sex partner in the two years prior to the 1990 survey, there was little association between the number of new sex partners and the use of condoms (Table 10). Greater risk (a larger number of partners) was not associated with more caution. Over 80% of those who reported four or more new partners did not always use condoms.<sup>6</sup>

The use of condoms was different for the 1992 sample. The proportion of this sub-sample who reported "always" using condoms increased from 15% in 1990 to 24% in 1992. This increase is significant at the .001 level. At the other end of the scale, the percent of those who reported never using a condom decreased from 45% in 1990, to 29% in 1992. More people may be using condoms only in the initial stages of a relationship, until they feel they can trust their new partner. These increases in condom use imply a different trend than has been indicated by declines in condom sales in the late 1980s and early 1990s.

For respondents who reported at least one new sexual partner and did not always use a condom, the most frequent reason given was that they thought that they knew their partner, or that this was a long term relationship (33%). A number of people must have thought that other methods of birth control would prevent HIV/AIDS (13%), because they reported that they didn't use condoms because they had used some other type of birth control. Twelve percent said that they just didn't like condoms. The next most frequent answer, "didn't think about it" (12%) was followed by "not always available" (10%) and a scattering of responses such as "unplanned sex", "didn't see the need to", "it will never happen to me" and "stupidity."

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<sup>6</sup> Based on a survey of Canadian adults, Ornstein (1989) reported that among men with new partners, 24% always used condoms and 54% never used them. For women, 13% always used condoms and 66% never used them. These sex differences may be related to reporting biases, and to some degree, they may reflect social desirability associated with practising safer sex. The Alberta surveys only asked those with new sex partners about condom use. This relatively small sub-sample could not be reliably further broken down by gender.

Table 10.

## New Sexual Partners and Condom Use

		Condom Use (1990) (Percent)				
		Always	Most	Some	Never	Total
No. of New Partners (2 yrs.)	1	15.8	9.2	22.0	53.0	42.5
	2	13.9	11.6	21.7	52.8	23.4
	3	9.5	25.4	37.1	28.0	14.0
	4 or more	19.1	21.7	27.6	31.5	19.6
	Total	14.8	15.1	25.4	44.7	N=214
		Condom Use (1992)				
		Always	Sometimes	Never	Total	
No. of New Partners (2 yrs.)	1	19.9	35.8	44.3	25.2	
	2	27.8	38.5	33.7	35.2	
	3	26.4	61.7	11.9	19.4	
	4 or more	22.7	61.2	16.1	20.2	
	Total	24.5	46.9	28.6	N=213	

\*  $p < .05$ 

There was also a slight tendency for those who had more new partners to be more likely to use a condom. The percentage of those who reported that they never used condoms decreased from 44% for those with only one new partner, to well under 20% for those who reported three or more partners. However, the percent who always used a condom, the only fully risk-averse course of action, was not greater for those who reported more new partners (greater risk).

In terms of HIV/AIDS prevention, the good news was that there were definite, strong signs that compared to 1990, 1992 respondents who were at high risk were much more likely to report that they at least used a condom some of the time . This can be viewed as the first step (trial) in the adoption of more consistent use. Among the 1990 sample, 28% of those who reported three new partners never used a condom. This had dropped to 12% in 1992. In 1990 32% of those who reported four or more new sex partners never used a condom. In 1992, the corresponding figure was 16%.

The bad news in the 1992 results was that over three quarters of those at risk still did not use condoms all the time. In addition, the increase in always using a condom was not very large for those at highest risk. The percentage of those with four or more partners who reported always using a condom increased from 19% in 1990 to 23% in 1992.

## **6.1 PERCEIVED HIV/AIDS RISK AND CONDOM USE**

As noted above (Table 4), there was a significant tendency for those who reported risk behaviours to also perceive themselves to be at higher risk of HIV infection. Do people who do not protect themselves know they are at greater risk? The results in Table 11 indicate that they do not. In fact, those who perceived high or medium risk of HIV/AIDS were actually less likely to report that they always used a condom (16% and 20%, respectively) than those who reported low or no risk (26% and 25%, respectively).

The further investigation of the relationship between sexual behaviour which entailed risk of HIV infection and condom use was limited because only those with new sex partners were asked how consistently they used condoms. Self-identification as having engaged in other high risk behaviours (eg. intravenous drug use) was ascertained only of those who reported a new sex partner. These few people who had engaged in multiple types of risk were actually less likely to always use a condom than were others who had new sex partners (17% versus 26%). These differences were not significant.

**Table 11. HIV/AIDS Risk and Condom Use (Alberta 1992)\***

		Condom Use (Percent)			
		Always	Sometimes	Never	Total
Perceived Risk of AIDS  (p = .536)	High	16.0	0.0	84.0	1.9
	Medium	20.5	32.4	47.0	11.1
	Low	26.1	25.8	48.0	60.6
	None	25.0	34.9	40.1	26.4
Multiple Risk  (p = .514)	No	26.1	28.6	45.3	88.3
	Yes	17.2	27.2	55.6	11.7
	Total	25.0	28.5	46.5	N = 235

\* The question concerning condom use was only asked of those who reported new sex partners in the two years prior to the survey. These cross tabulations therefore include only those with new sex partners in the two years prior to the survey (N=236).

Neither highly risky behaviours nor a higher perceived risk of HIV/AIDS were associated with the consistency with which people with new sex partners used condoms as a preventative measure against HIV/AIDS.

## **6.2 HIV/AIDS KNOWLEDGE AND CONDOM USE**

Were those who reported new sex partners, and were therefore at higher risk of HIV infection, more likely to use condoms consistently if they were better informed about HIV/AIDS? Ornstein (1989) reported that for his sample of Canadian adults, those who were more knowledgeable were not more likely to practice safer sex (use condoms). Indeed, he found that those who knew more were more likely to engage in sexual behaviour which entailed risk of HIV infection.



Table 12 compares the condom use of those who reported new sex partners and gave correct answers to the HIV/AIDS knowledge questions to those who reported new sex partners and did not give the correct answers. There was no support for the proposition that those who were better informed were less likely to report behaviour which entailed risk of HIV infection. Indeed, those who did not know about the "invisibility" of HIV carriers were actually more likely to always use condoms (31%) than were those who correctly answered the question (23%). However, among those with new sex partners, those who knew about the "invisibility" of HIV were more likely to use condoms sometimes. Even though the overall association is not significant, this may reflect a trend towards occasional condom use by those who engage in risk behaviour.

Those who thought that condoms were very effective in preventing the transmission of HIV were actually less likely to use them consistently (22%) than were those who did not say that condoms were "very effective". Again, there was not a significant association between knowledge about condom use and use of condoms. This same pattern of results was observed when the definition of correct knowledge about the effectiveness of condoms was expanded to include those who said it was "somewhat effective" and cited human error as the reason.

**Table 12**

**HIV/AIDS Knowledge and Condom Use\***  
(Alberta, 1992)

HIV/AIDS Knowledge	Condom Use (Percent)		
	Always	Sometimes	Never
1. Can't see HIV/AIDS			
Correct	23.1	50.2	26.7
		p = .144	
Not Correct	30.7	33.8	35.5
2. Condom Effective			
Correct	22.2	49.6	28.1
		p = .693	
Not Correct	26.9	45.0	28.8
3. Condom Very Effective**			
Correct	22.9	47.7	29.3
		p = .853	
Not Correct	26.2	45.8	27.9

\* These cross-tabulations include only those who reported at least one new sex partner in the two years prior to the survey (N=236).

\*\* Or somewhat effective because of human error

## 7. HIV TESTING

The 1990 National Health Interview Survey (NHIS) in the United States (MMWR, Oct. 9, 1992) found that nearly one-quarter of the respondents had been tested at least once (24%). About two-thirds (67%) of those tested were tested for blood donation, and 24% were tested for other required purposes (e.g. insurance, surgery). About one-fifth of those tested had obtained the test voluntarily to determine their HIV-antibody infection status. For the 2% of respondents who were at higher risk (drug use, anal sex) 45% reported having been tested at least once, and 25% had been tested voluntarily.

In the 1990 PRL Alberta survey, 10% of the Alberta adults reported that they had been tested for HIV, or that they expected to be tested within the year following the survey. Sixteen percent of those who were at higher risk for HIV infection had been or expected to be tested, as did 37% of the very few respondents who reported that they thought their chances of getting HIV were high. This fell to 16% for those who thought their chances of getting HIV/AIDS were medium.

By 1992, 14% of the 1,277 Alberta adults surveyed by the PRL had been tested. This represented a significant increase over 1990 ( $t=3.06$ ,  $p < .05$ ), but it is still far lower than the comparable figure for the United States (24%). Of those who had been tested in the 1992 Alberta survey, 38% said that the reason for the test was for their own information. This is a considerably higher than the 20% that was observed for the U.S. The next most frequent reasons in Alberta were for life insurance (22%) or because the respondent had been donating blood (17%). Fewer than one in ten (9%) of those tested in Alberta said that they did it because their doctor had so advised, and 4% had the test in connection with surgery. Three percent said it was a job requirement, and a similar percentage had been tested because of immigration requirements. Testing associated with blood donation was much lower in Canada than in the U.S., while required testing for other purposes was somewhat higher.

Those who were tested were also asked if anyone had talked to them about the test. Only one in four of those tested (26%) reported that anyone had talked to them. In over 90% of these cases, the person who talked to them was a health professional. The Alberta figure for self-reported pretest counselling in conjunction with HIV testing is less than one-half the percentage reported in the 1990 national U.S. NHIS (58%).

While the Centre for Disease Control (CDC) in the United States has reported that virtually all of those tested received pretest counselling, only 58% of those tested reported pretest counselling in the NHIS (MMWR, 1992, 41:745-6). Self-reports of counselling are subject to recall bias and other reporting errors. There may be considerable difference between what clients consider to be counselling and what programs report as their counselling activities. Still, the difference in self-report pretest counselling rates for Alberta and the U.S. national sample are striking.

As to specifically what was communicated in conjunction with the HIV antibody test, 72% of those tested in the Alberta sample reported that what was communicated was the "how", "why" or "where" the test was done. Only 14 respondents gave a second answer, and a further 45% of those responses also referred to the test itself or the communication of results. Of the few who did report pretest counselling, only one in four (28%) reported receiving any HIV/AIDS educational information. This amounted to only 11 of the 171 subjects who reported that they had been tested. An additional 7 subjects reported HIV/AIDS education as a second answer. In total, 10% of those tested reported receiving any HIV/AIDS education information before their test.

These self-report results are subject to recall and other biases. It is possible that much higher rates of HIV/AIDS-related education would have been recorded if direct questions had been asked. However, if HIV/AIDS-related pretest counselling is being delivered, even the incidence and type of counselling itself does not leave enough of an impression to be remembered and reported by clients. This is particularly disturbing in the light of comparison of U.S. and Alberta figures.



Of those who had been tested, 83% said that they had wanted the results (Table 13). Only 77% of those who wanted the results got them, and 23% of those who didn't want them reported that they received them anyway. Most of those who didn't want their results (78%), didn't want them because they thought that they would be negative anyway. Another 14% said that they only wanted the results if they were positive, and the remaining 8% said that the test was mandatory as they gave blood. Most of those who got the results got them in person (71%), although 19% got the results over the phone and 10% got the results in the mail.

Of those who did not get their results (N=61), 23% assumed it was negative, 30% said they would have heard if the results were positive, and 16% didn't ask for the results. The results were sent to insurance companies in 25% of the case.

Of those who got the results of their test, 34% said that they were counselled about the results. This is a little higher than the pretest counselling figures, but it remains very low. Most of the time (95%), the counsellor was a health professional. Of the few respondents (N=42) who talked to someone, most (89%) reported that they were simply told that the results were negative. Even including the second probe, only four respondents of the 171 who were tested (2%) volunteered that their test results were accompanied by information about safer sex practices or risks of HIV infection.

## **7.1 WHO HAS BEEN TESTED?**

While a slightly higher percentage of the Calgary sample had been tested (17%), location differences were not significant (Table 14). Younger respondents aged 18-29 and 30-39 were more likely to be tested (17% and 18%, respectively), and age differences were significant. Gender differences were also significant, with relatively more males (16%) than females (11%) reporting testing.

Table 13

**HIV Testing: Wanting and Getting the Results\***  
(Alberta, 1992)

	Want Results (Percent)		
	Yes	No	Total
<b>Get Results</b>			
Yes	77.1	22.7	68.0
No	22.9	77.3	32.0
Total	83.3	16.7	N = 161
p = .000			

\* Included only those who were tested for HIV.

Marital status differences in testing were significant (Table 14). Those who were separated were the most likely to report testing (24%), followed by those living common law (23%), the never married (19%) and the divorced (18%). The married were considerably less likely to report testing (10%) and the widowed were very unlikely to report testing (3%). Education differences in testing were also significant, with those who had achieved at least some post-secondary education most likely to report testing.

## 7.2 HIV/AIDS RISK AND HIV TESTING

The pattern of age, gender, marital status and education differences in testing suggests that those who are most at risk are the most likely to be tested. Table 15 reports the cross-tabulation of HIV/AIDS risk with HIV testing.

Table 14.

**Socio-Demographic Factors and HIV Testing  
(Alberta 1992)**

		Percent Tested				
Location		Edmonton		Calgary		Other
p = .089		11.6		16.7		14.0
Age (Yrs.)		18-29		30-39		40-54
p = .000*		17.3		17.9		11.3
						5.8
Gender		Male			Female	
p = .005*		16.5			10.9	
Marital Status		N.M	Mar.	C.L.	Div.	Sep.
p = .000*		18.7	10.2	22.8	17.9	24.8
						2.6
Education		<H.S.		H.S.		Post Sec.
p = .000*		8.7		9.5		17.5
						17.4

\* p < .05

**Table 15**  
**Reported HIV/AIDS Risk and HIV Testing**  
**(Alberta 1992)**

Reported Sex Risk	HIV Tested (Percent)	
	No	Yes
No	87.6	12.4
	$p = .002^*$	
Yes	78.5	21.5
Perceived Chances of Getting HIV/AIDS		
High	71.8	28.2
Medium	86.5	13.5
	$p = .224$	
Low	85.8	14.2
None	87.2	12.8

\*  $P < .05$



Those who reported new sex partners and did not always practice safe sex by using a condom were much more likely to reported that they had been tested for HIV antibodies (22%), than were those who were not at risk (12%). Those who were at greater risk were considerably more likely to have been tested. Although the few respondents that thought they were at high risk of HIV/AIDS were much more likely to get tested (28%), there was not a significant association between respondents' perceived chances of getting HIV/AIDS and whether or not they had been tested.

## 8. DISCUSSION AND CONCLUSION

### 8.1 RISK OF HIV INFECTION

Between 1990 and 1992 there was a slight, non-significant decrease from 15% to 13.8% of Alberta adults who reported that they engaged in sexual behaviour which entailed some risk of HIV infection. They had one or more new partners and did not always use a condom. However, there was a large drop over the same period in the percent of common-law respondents who reported engaging in sexual behaviour which entailed risk of HIV infection. These results are difficult to interpret because they are based on small sub-samples, but they do suggest behavioral change among people who are in situations where they may be exposed to risk of HIV infection.

There was also a slight increase (from 48% to 52%) in the proportion of the sample who thought that they had some chance of getting HIV/AIDS. More importantly, there was a stronger association in 1992 than there had been in 1990, between reported risk taking and the perception of risk. In 1990 those who engaged in behaviour which entailed risk of HIV infection were no more likely to perceive themselves to be at risk than were those who had not engaged in risky behaviour. Behaviour which entailed risk of HIV infection was not significantly associated with the perception of risk. Also, in the 1992 survey, respondents who engaged in multiple types of risk behaviour were more likely to perceive risk of getting HIV/AIDS. This provided some evidence of success in the educational efforts directed at informing those who engage in behaviours which entail some risk of HIV infection.

In general, the reasons which people gave for feeling relatively safe from risk of HIV/AIDS infection were accurate (abstinence, monogamy). However, the reasons given to support the perception of "high" or "medium" chances of getting HIV/AIDS were not well founded. These reasons included high risk work, high prevalence, and medical or dental treatment. None of these factors has been significantly involved in HIV infection in Alberta. On the other hand, those which have been important (e.g. unprotected sexual contact, I.V. drug

use) were not mentioned frequently. The prevalence of this misinformation suggests the need for continuing educational efforts.

## **8.2 KNOWLEDGE ABOUT HIV/AIDS**

Despite differences in the knowledge questions asked in the 1990 and 1992 surveys and the limitation of having only two questions in each survey, there is some indication of improved understanding that one can have HIV and not look sick (detection). However, less than one-third of the respondents correctly answered the prevention question about the effectiveness of condom use. These questions should be repeated in subsequent surveys in order to track change, and other knowledge questions should be added to support education efforts.

While our analysis is limited to the information provided by just two survey questions, there was some indication from age differences in HIV/AIDS knowledge that there had been some success in targeting young, single adults. They tended to be better informed about the detection of HIV infection. However, there appeared to be relatively less success with regard to the communication of prevention information (condom use).

In the 1990 survey those who engaged behaviours which put them at risk of HIV infection were actually less well-informed about HIV/AIDS. In the 1992 survey those who engaged in sex behaviour which put them at risk of HIV infection were more likely to know about detection (that HIV is "invisible"). They were only slightly more likely to know about the condom's effectiveness in prevention. Again, while education efforts appear to have reached those who engage in behaviours which put them at risk of HIV/AIDS, further efforts are clearly needed.

## **8.3 PREVENTION: THE USE OF CONDOMS**

The proportion of those reporting new sex partners who always used a condom increased significantly, from 15% in 1990 to 24% in 1992. Among those with new sex partners, the proportion who never used condoms decreased markedly from 45% in 1990 to 29% in 1992. More people who engage in behaviours which might put them at risk of HIV infection always

use condoms, and many more are at least using condoms some of the time. The use of condoms some of the time may indicate use only in initial stages of new relationships. Further research is necessary to confirm this hypothesis.

In 1990 those who had a greater number of sex partners (greater risk) were not more likely to always use a condom (greater caution). However, in 1992 there was a significant association between the number of new sex partners and condom use at least some of the time. Again, this may be an important first step in the adoption of new preventative behaviours. Still, there was no association in the 1992 survey between number of partners and condom use all of the time. Also, there was no association between knowledge about detection or prevention and the use of condoms by those who had new sex partners. While the increased use of condoms some of the time may represent an important step in the adoption of appropriate prevention, further research is necessary to support educational efforts directed at improved prevention efforts. The challenge is to make those at risk aware of the need to always use condoms, and to encourage action based upon that belief. In the 1992 survey over three-quarters of those who engaged in sexual behaviours which put them at risk of HIV infection did not use condoms all the time.

## **8.4 HIV TESTING**

There was a marked increase in the proportion of Albertans who reported that they had been tested for HIV, from 10% in 1990 to 14% in 1992. However, testing has not yet reached even the 1990 U.S. national levels of 24%. Reasons for having the HIV test differed markedly between the U.S. and Alberta samples. Albertans were twice as likely as the U.S. sample to have the test voluntarily (for their own information), testing associated with blood donation was relatively less frequent in Alberta than in the U.S., and only 9% of Albertans tested did so on a doctors advice.

Alberta adults under the age of 40 were twice as likely to be tested as adults 40 years of age and older. Males were much more likely to be tested than females, and married or widowed Albertans were less likely to be tested than all other marital statuses. Those with post-secondary



education were twice as likely to be tested, and 22% of those who had engaged in sexual behaviour which entailed risk of HIV infection reported testing.

Only one in four of the Alberta adults who reported testing had been counselled about the test. Only one in ten of those tested reported any HIV/AIDS counselling before the test was carried out, and only 2% of those tested reported HIV/AIDS counselling after the test. While these very low numbers are probably partially attributable to "poor memory", it is instructive to note that similar surveys in the U.S. report that 58% those tested remembered receiving pretest counselling. Considerable efforts are necessary to strengthen HIV/AIDS education associated with HIV testing in Alberta.

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APPENDIX 1:  
THE 1990 PRL SURVEY

## **APPENDIX 1: THE 1990 PRL SURVEY**

### **1. INTRODUCTION**

The HIV/AIDS questionnaire items on the 1990 Alberta Survey were designed to estimate the extent of self-assessed risk among respondents for acquisition of the human immunodeficiency virus (HIV), to provide input to HIV/AIDS educational campaigns, and to inform public policy concerning the opinions of Albertans on HIV/AIDS-related issues. The 1990 PRL Alberta survey was administered to 1,245 adults through face-to-face interview in Edmonton, and telephone interviews for respondents in the rest of the province. Interviewing was completed during February and March of 1990. A more detailed discussion of the research methods employed and the questions asked is included in Appendix 1.

### **2. Sampling Design: How Respondents Were Selected**

The main features of the sampling design are as follows:

1. The Province of Alberta was delineated into three areas:
  - a. The City of Edmonton for face-to-face interviewing.
  - b. The City of Calgary for telephone interviewing.
  - c. The remainder of the province ('Other Alberta') for telephone interviewing
2. A two-stage selection process was used to obtain the survey sample.
  - a. First, households were selected for inclusion in the sample.
  - b. Next, a respondent within each household was selected.

### **3. Face-To-Face Sampling Procedure for the Edmonton Area**

The 1990 Edmonton population universe was designated as all persons 18 years of age or older who at the time of the study were living in a dwelling unit that was enumerated



during the City of Edmonton Civic Census in the spring of 1989. To retain the comparability of the Edmonton face-to-face sample with previous Edmonton Area Studies (EAS), a sample size of 400 or more was deemed necessary. This sample size permitted Edmonton area data to be analyzed as a separate entity, as well as the Calgary and "Other Alberta" areas.

The sampling frame consisted of a computerized list of addresses compiled by the City of Edmonton from their most current enumeration (1989). From the computer, a simple random sample of 620 addresses was selected for personal interviewing. Nursing homes, military bases, and temporary residences were deleted from the sample. Within the household, one eligible person was selected as the respondent for the one hour interview.

Interviewers were instructed to obtain an equal number of male and female respondents within their allotment of interviews. As adult males are generally more difficult to contact, the following selection procedure guidelines were established for the interviewers to assist them in obtaining their quotas:

- a. The dwelling unit must be the person's usual place of residence and he/she must be 18 years of age or older.
- b. If an adult male answers the door and is willing to be interviewed, he is the respondent.
- c. If an adult female answers the door and there is an adult male who is willing to be interviewed, then the male is to be interviewed. If the male is not willing to be interviewed, and the female is willing to do so, then the female is to be interviewed.<sup>7</sup>
- d. If an adult female answers the door and there is not an adult male present, then the male is requested to respond to the questionnaire.

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<sup>7</sup>Sixty percent of the first eligible persons encountered were female. In households where a completed interview was obtained, 88% of the first eligible persons agreed to participate in the survey.

The final gender composition of the Edmonton area sample obtained using these procedures was 49.6% male and 50.4% female.

#### **4. Telephone Sampling: Calgary and Non-Metropolitan Areas**

The population universe designated for telephone interviewing was all persons 18 years of age or older who, at the time of the survey, were living in a dwelling unit in Alberta outside the City of Edmonton that could be contacted by means of direct dialling telephone services. From this population, two samples were drawn to represent the area: the first sample represented the City of Calgary and the second sample represented all other areas of Alberta outside of Edmonton and Calgary, respectively.

In previously studies conducted by the Population Research Laboratory, computer files of working five-digit telephone banks for all of Alberta were developed. The samples of telephone numbers for Calgary and 'Other Alberta' were generated from these files by selecting, with replacement, a simple random sample of banks for each area and appending a random number between 00 and 99 to each number selected. All duplicated numbers were discarded.

In accordance with the instructions given to face-to-face interviewers, the telephone interviewers were instructed to obtain an equal number of male and female respondents. Again, as adult males are generally more difficult to contact, the selection procedure guidelines were the same as for face-to-face interviews.

The final gender composition of the samples obtained for telephone interviewing using the above methods was 51.0% male and 49.0% female for the 'Other Alberta' area, and 50.4% male and 49.6% female for The City of Calgary.

#### **5. Sample Characteristics**

A total of 1,245 individuals participated in the 1990 All Alberta Study and responded to the HIV/AIDS-related questions. The response rate by geographical area was 75.3% for

Edmonton, 75.4% for Calgary, and 79.5% for the 'Other Alberta' regions, with 448 of respondents residing in Edmonton, 401 respondents residing in Calgary, and 396 respondents residing in other areas of Alberta. As a final sample obtained was not proportional in size to the Alberta population it represents, weighting of the sample was necessary in order to combine the sample to obtain a representative provincial sample. This procedure yielded a weighted sample of 317 persons from Edmonton, 349 persons from Calgary, and 579 persons from other areas of Alberta. The total weighted sample size was 1,245 persons.

## **6. Design and Content of the 1990 Survey Questionnaires**

Two questionnaires were used in the study, one for face-to-face component of data collection and one for the telephone interviews. All the telephone survey questions were taken from the face-to-face instrument and then modified slightly so that they were suitable for administration by telephone. No response categories or rating scales were altered in this process.

The questionnaires contained eleven questions which specifically addressed HIV/AIDS - related issues, knowledge, attitudes, and behaviours. A copy of the survey questions are contained in Appendix A of this report.

The survey questions were pre-tested on a total of sixty-seven Edmonton householders, and necessary modifications in the design of questions were made before the study was implemented across Alberta. All questions were also approved by a University of Alberta Ethics Committee prior to administration of the questionnaires to the public.

## **7. Data Collection Procedures**

### **7.1 Face-to-Face Interviews in Edmonton**

Beginning on February 10, 1990 a total of 35 trained interviewers from the Population Research Laboratory interviewing pool conducted interviews of Edmonton area respondents. During the week prior to the commencement of fieldwork, an introductory letter was sent to each selected address. The letter briefly described the nature of the study and advised the residents of the household that an interviewer would be visiting in the near future.

If the interviewers were unsuccessful in establishing contact on their first visit to a selected address, a maximum of four call-back attempts were made before the address was declared a "non contact".

At the outset of each interview, the interviewer advised the respondent that his or her participation was voluntary, that responses would be kept completely confidential, and that the interview could be terminated at any time.

The data collection period spanned six weeks, with 60% of the interviews conducted during the first two weeks. The highest number of completed interviews occurred on Tuesdays, while the fewest interviews were completed on Fridays. On average, each interviewer completed 13 interviews. Twenty-five addresses were found to be ineligible as households as they referred to vacant or demolished buildings. Deletion of these addresses represented corrections to the sampling frame rather than non-response addresses.

Thirty-eight percent of the completed interviews were verified through a series of telephone checks and home visits. No significant discrepancies or irregularities in the responses were found as a result of these follow-up procedures.



## **7.2 Telephone Interviews**

Telephone interviewing began on February 12, 1990 and was completed in mid-March of that year. A total of twelve interviewers conducted this phase of the data collection.

If an interviewer was initially unsuccessful in establishing telephone contact with a pre-selected household, a maximum of ten call-back attempts were permitted before the telephone number was declared a "no contact" number.

Upon establishing contact with a household, the interviewer identified herself, verified the telephone number reached, and asked screening questions for the selection of a respondent. Before administering the questionnaire, the interviewer advised the respondent that his or her participation was voluntary, that responses would be kept completely confidential, and that the interview could be terminated at any time.

The telephone data collection phase was conducted over a six week period, with 46% of the interviews completed during the first two weeks. On average, each telephone interviewer completed 66 interviews. Twenty-one percent of the completed interviews were verified by means of a follow-up telephone call to the respondent. No significant discrepancies or irregularities in the responses were found as a result of this follow-up procedure.

## **8. Results**

Over 93% of the 1,245 Albertans interviewed in 1990 rated their chance of getting HIV as low or nonexistent. Yet 17% of the respondents reported that they had engaged in behaviours which put them at risk to HIV infection. They had used intravenous drugs, were male homosexuals or had sex with someone who had. More commonly they were at risk from unprotected sexual intercourse with new partners. Those at greater risk for HIV/AIDS

were not more likely to see themselves as being at greater risk. They were also not more likely to use condoms as a means of practising safer sex.

Almost one-half of all persons interviewed were misinformed or uninformed about the fact that HIV was very likely to develop into full-blown AIDS. Young adults aged 18 to 29 years were most likely to be misinformed. This observation was disturbing young adults are often at greater risk because they are more likely to engage in risk behaviours (Alberta Community and Occupational Health, 1987).

About one in ten Albertans said they personally knew, or had known, a person with HIV/AIDS. These respondents who had some personal experience of HIV/AIDS were more likely to rate their chances of getting HIV/AIDS as "high" or "medium". Nevertheless, current public opinion about HIV/Aids exists in a context of very little personal experience with the epidemic. Only 4% of the sample spontaneously identified HIV/AIDS as an important issue in a separate part of the questionnaire.

When it came to HIV testing, more than one-half of the sample (55%) thought that employers should have the right to require an employee to be tested for the HIV infection. Only 10% had been tested or expected to be tested over the 12 months following the survey, but given assurances of confidentiality, 89% said they would agree to be tested. Almost all of those who said they would be tested (91%) said that they would want to know the results of their HIV test.

Most Albertans' were fairly tolerant towards persons with HIV/AIDS. Sixty-two percent disagreed with the statement that "most AIDS victims deserve what they got", and 73% said they would not take their child out of school to avoid contact with a classmate with HIV/AIDS. Reductions in funding for HIV/AIDS care and treatment programs had little support.

APPENDIX 1:  
AIDS QUESTIONS ON THE 1990 ALBERTA SURVEY QUESTIONNAIRE

1. Have you ever personally known anyone with AIDS or the AIDS virus? (yes, no, don't know)
  
2. Employers should have the right to require an employee to be tested for the AIDS virus.
 

strongly agree	1
agree	2
disagree	3
strongly disagree	4
undecided (volunteered)	8
  
3. What are your chances of getting the AIDS virus? Do you think they are (high, medium, low, none, don't know)
  
4. Do you expect to have a blood test for infection with the AIDS virus in the next 12 months? (yes, no, never heard of the test, don't know)
  
5. AIDS has been described as one of the major health problems in the country. A study may be done and blood samples taken to find out just how widespread the problem is.
  - a. If you were selected in this national sample of people to have their blood tested with assurances of privacy of test results, would you have the test? (yes, no, don't know)
  - b. If you had your blood tested, would you insist on knowing the results? (yes, no, don't know)
  - c. Should people's blood be tested for the AIDS virus without their knowledge it was being done? (yes, no, don't know)
  
6. Please tell me if you think any of the following people should be tested for AIDS, even if they do not give consent?
  - health care workers
  - recipients of blood transfusions
  - blood donors and organ donors
  - (e.g. kidneys)
  - patients entering hospital
  - the military and airline pilots
  - homosexuals (gay men)
  - bisexual men
  - prostitutes (male or female)
  - injection drug users
  - any others? (**specify**)
  
7. a. In your estimation, what percentage of people who now have the AIDS virus will eventually get sick with AIDS? Would it be ...
 

less than 10%	1
10 to 49%	
50 to 89%	
90 to 100%	
don't know (volunteered)	

- b. In your estimation, what percentage of people who now have the AIDS virus are actually sick with AIDS? Would it be ...

less than 10%  
 10 to 49%  
 50 to 89%  
 90 to 100%  
 don't know (volunteered)

8. Please tell me how much you agree or disagree with these statements:

- a. Most AIDS victims deserve what they got (i.e. the AIDS disease).

Strongly Disagree		Strongly Agree		Don't Know
1	2	3	4	5
				6
				7
				8

- b. If a child with AIDS were to attend my child's school, I would take my child out of the school.

Strongly Disagree		Strongly Agree		Don't Know
1	2	3	4	5
				6
				7
				8

- c. People who get AIDS deserve first class health care.

Strongly Disagree		Strongly Agree		Don't Know
1	2	3	4	5
				6
				7
				8

- d. **ASK IF "c" is AGREE (e.g. 5,6, or 7).**

Is that the case regardless of what it costs? (yes, no, don't know)

9. I am going to read a list of statements. Please tell me after I finish all of the statements if at least one is true for you. (Read slowly)

- You have used drugs by needle at any time since 1977.
- You have haemophilia and have received clotting factor concentrates since 1977.
- You are a man who has had sex with another man at some time since 1977, even one time.
- You have had sex for money or drugs at any time since 1977.
- Since 1977, you are or have been the sex partner of any person who would answer yes to any of the items I've just read.

Were any of the statements I read true for you? (yes to at least one, no to all of them, refused to say)

10. a. In the last two years have you had sex with at least one new partner? (yes, no)

- b. How many new partners did you have? (Ask if yes to 10a)

11. Did you use a condom all of the time, most of the time, some of the time, or not at all? (Ask if yes to 10a)



**APPENDIX 2:**  
**RESEARCH DESIGN FOR THE 1992 SURVEY**

## **APPENDIX 2: RESEARCH DESIGN FOR THE 1992 SURVEY**

### **1. INTRODUCTION**

Alberta Survey is carried out through a one-half hour telephone interview and contains an amalgam of different question topics as well as a standard set of classification indicators (socio-demographic characteristics). The focal topics for the yearly survey change each year, while the classification indicators are repeated every year. Several of these classification indicators (location, age, marital status, gender and education) are used in this report to describe the sample (Table 1), and to identify those who responds to the HIV/AIDS questions in different ways.

### **2. SAMPLING DESIGN**

The sampling design for the PRL Alberta Survey uses a multi-stage sample of residential telephone numbers to select households from within three regions: the city of Edmonton, the city of Calgary and the remainder of Alberta. The sample is disproportionate within these three areas (over-sampled within Calgary and Edmonton) and sample estimates are therefore re-weighted to yield accurate estimates for the province as a whole. Within households, a quota sample (emphasizing males in order to represent them proportionately) is used to select individuals for interviewing.

The sample population included all persons 18 years of age or older, who, at the time of the survey, were living in a dwelling unit in Alberta that could be contacted by means of direct dialling telephone services. The PRL has generated a computer readable file of working five digit telephone banks (the three numbers of the telephone exchange and the first two digits which follow) for each of the three areas. Telephone numbers were selected, with replacement, in a simple random sample of working banks within each of the three areas with two additional digits randomly appended to give a seven digit telephone number.

When they reach an eligible residence, telephone interviewers interview an adult male if one is available, and if not, they interview any available adult female. Males are generally more difficult to contact, and this quota sampling is done so as to obtain a roughly equal number of male and female respondents. In 1990 this resulted in 51% males and in 1992 it resulted in 49% males (Table 1).

A total of 1,245 usable interviews were completed in 1990, while in 1992 the total was 1,277. In 1990 the response rate was 75% for Edmonton, 75% for Calgary and 80% for the remainder of Alberta. In 1992 the response rate was 74% for Edmonton, 76% for Calgary and 78% for the remainder of Alberta. Response rates over 70% are generally considered quite acceptable.

### **3. SAMPLE CHARACTERISTICS**

The re-weighted sample was set proportionate to the (1991 census) population, so that the Edmonton cluster contained 25% of the sample, Calgary contained 28% and the rest of non-metropolitan Alberta had 47% of the interviews. These sample characteristics are summarized in Table 1. The age distribution for 1992 showed a fairly young sample with 26% under 30 years old, 29% between the ages of 30 and 39, 24% between the ages of 40 and 54, and only 20% 55 years of age or older. As we would expect, this distribution change very little in the short period between 1990 to 1992.

The percentage of married respondents was slightly lower in the 1992 sample at 55% compared to 61%, and the percentage of never-married respondents was slightly higher (22% versus 18%). Other marital statuses all had very slightly higher representation in the 1992 sample: common-law 7% in 1992 versus 6% in 1990; divorced 8% in 1992 versus 7% in 1990; separated 4% in 1992 versus just under 4% in 1990; and widowed just over 5% in 1992 versus 5% in 1990.

Table 1.

**Sample Characteristics**  
**(Alberta 1990, 1992)**

			Percent	
			1990	1992
		1990 N = 1,245		
		1992 N = 1,277		
1.	Location	Edmonton	25.5	25.5
		Calgary	28.0	28.0
		Other	46.5	46.5
2.	Gender	Male	50.5	49.1
		Female	49.5	50.9
3.	Age	15-29 Yrs.	24.8	25.6
		30-39	29.7	29.2
		40-54	24.2	24.5
		55+	20.9	20.2
		Missing	.5	.4
4.	Marital Status	Never Married	17.6	21.9
		Married	60.6	54.6
		Common-Law	6.0	6.4
		Divorced	7.1	7.5
		Separated	3.7	4.0
		Widowed	5.0	5.4
5.	Education	< High School	23.6	24.0
		High School	22.7	21.3
		Some Post Secondary*	14.8	40.5
		University*	38.7	14.0
		Missing	.3	.2

\* In 1990 "University" included all completed post-secondary. In 1992 it included only included university degrees.



The distribution of educational levels attained changed very little between the 1990 and 1992. The differences reflected in the table are primarily a result of recoding the category "university" to contain only those who had completed a university degree.

#### **4. HIV/AIDS-RELATED QUESTIONS**

The telephone interview used in the 1992 survey contained a separate section of HIV/AIDS-related questions at the end of the interview. A copy of these questions is contained at the end of this Appendix. All questions were pretested with a separate sample of 60 residents of the Edmonton area (both rural and urban). Questions were approved by a University of Alberta Ethics Committee prior to administration to the public.

Questions dealt with HIV/AIDS-related knowledge (questions 78 and 79), perceived chance of getting HIV (question 80), HIV testing and test results (question 81 to 86), sexual behaviour (questions 87 to 90) and self identification with high risk behaviours for HIV/AIDS (question 91). Two aspects of HIV/AIDS related knowledge were examined. Question 78 dealt with whether or not people knew that those with the HIV infection could not be visually detected (and therefore, possibly, avoided). Question 79 asked how effective it was to prevent the transmission of HIV during sexual intercourse through the use of a condom. The correct answer was "very effective", but the answer "somewhat effective" was allowed if the reason given for the ineffectiveness was human error.

HIV/AIDS risk was measured in several different ways. Question 80 asked respondents to rate their own chance of getting HIV as "high, medium, low, or none" (subjectively perceived HIV/AIDS risk). Question 87 asked people if they had sex with at least one new partner in the last two years, with follow-up question (87b to 90) asking the number of different partners, sex of partners, whether or not the respondents and his or her partner(s) always used a condom, and why they didn't always use one, if that was the case. Respondents who were judged to be at risk of getting HIV through sexual contact were

identified as those who reported one or more new partners, and also reported that they or their partners did not always use a condom.

A third way of identifying those at risk asked respondents if, since the early 1980's, they had injected drugs, taken part in anal sex, or had sex with anyone who had injected drugs or had taken part in anal sex (question 91). This question was not asked of the whole sample. It was directed only to those who reported at least one new sex partner in the two years prior to the survey. The information is therefore of limited utility because it identifies only those with previous high risk behaviours who also had new sexual relationships. One extra male who reported a new relationship (question 87) with another male (question 88), and did not report always using a condom (question 90) was reclassified as engaging in high risk behaviour.

In the 1990 survey, where a similar question was addressed to all respondents, 38 out of 1216 who replied (3%) identified themselves as having engaged in high risk behaviours for HIV infection (Table 3, Appendix 3). From the 1990 survey we can cross-tabulate this risk indicator with the independent identification of respondent's risk status from sexual transmission. This provides some information about the effects of restricting questioning to only those with new sex partners in the 1992 survey. When high behaviour was cross-tabulated with sexual behaviour which entailed risk of HIV infection for the 1990 survey, 33% of those who identified themselves as having engaged in high risk behaviours also reported new sex partner(s) and not always using a condom. Most of these people who had identified themselves as having engaged in behaviours which posed a high risk for HIV infection (67%) did not also identify themselves as having engaged in behaviour which being at risk from sexual transmission. In 1992 most of these people were inadvertently not asked if they had engaged in high risk behaviour.

## **5. REFUSAL RATES**

Refusal rates for the interview as a whole were similar for the surveys which included the HIV/AIDS questions and those in other years which did not. Less than 1% of the respondents gave no response to the questions which asked about new sexual partners and self-identification as engaging in high risk behaviours for HIV infection. These were potentially the most sensitive questions. For the knowledge question about (visual) detection and prevention (condom use) of HIV infection refusal rates were .3% and .2% respectively. We conclude that the general public has accepted the discussion of issues relevant to HIV infection and AIDS.

## **6. DATA COLLECTION**

Telephone interviewing began in mid-February and took about one month to complete. A maximum of 10 call back attempts were used before a telephone number was declared a "no contact". Upon establishing contact, the interviewer identified him or herself, the PRL and the survey, verified the telephone number, and asked screening questions relevant to the selection of respondents.

All respondents were told that their answers would be kept completely confidential, that their participation was entirely voluntary, and that they were free not to answer any question or to terminate the interview at any time. A randomly selected sub-set of interviews was verified by means of a follow-up telephone call to the respondent.

## 7. DATA ANALYSIS AND PRESENTATION

The raw data file was written as 80 column line images and stored on magnetic tape. Data were cleaned and tabulated using SPSSx and an SPSSx system file was generated to facilitate data retrieval and analysis.

Independent, classification variables included location, age, gender, marital status and age. As note above, a "risky sex" variable was constructed to identify respondents who reported at least one new sex partner in the two years prior to the survey, and also reported that they did not always use condoms. This sub-group was at risk for exposure to sexually transmitted HIV.

Throughout this report cross-tabulations were percentaged to add up to 100% within categories of the independent variables. Tables are then read by comparing across categories of the independent variables. For each table, the probability ascertained for a chi-square test of significance of the null hypothesis of " no association" is reported in the form " $p =$ ". When  $p$  is less than .05, this conventional level of significance indicates that we can reject the null hypothesis of no association (observed differences are due to the random chance involved in sampling). We can infer that there is likely to be an association in the population from which our representative sample was drawn.

All missing data are omitted from the tables. Marginal percentage distributions are indicated in the first table in which a particular variable is reported. Total sample size figures are reported for each table to allow readers to recalculate the frequencies if they so desire.



**THE FINAL QUESTIONS ARE ABOUT AIDS**

78. Please tell if you think the following statement is definitely true, probably true, probably false, or definitely false: A person can be infected with the AIDS virus and not look sick. (REPEAT CATEGORIES)

definitely true ..... 1  
probably true ..... 2  
probably false ..... 3  
definitely false ..... 4  
don't know (VOLUNTEERED) ..... 8

79. a. How effective do you think the use of a condom is to prevent getting the AIDS virus through having sex? (READ)

very effective ..... 1 (GO TO 80a)  
somewhat effective ..... 2 (ASK b)  
not at all effective ..... 3 (ASK b)  
don't know how effective (VOLUNTEERED) ..... 8 (GO TO 80a)  
don't know method (VOLUNTEERED) ..... 9 (GO TO 80a)

- b. Why do you think that (*a condom is somewhat/not at all effective*)?
- 

80. a. What do you think your chances are of getting the AIDS virus? Do you think they are: (READ)

high ..... 1  
medium ..... 2  
low, or ..... 3  
none ..... 4  
don't know (VOLUNTEERED) ..... 8

- b. Why do you think that? (PROBE)

1. \_\_\_\_\_

2. \_\_\_\_\_

81. a. Have you ever had a test for infection with the AIDS virus?

yes ..... 1 (ASK b)  
no ..... 2 (GO TO 87)  
don't know ..... 8 (GO TO 87)

b. Why did you have the test for the AIDS virus?

- for my own information ..... 01
- my doctor thought I needed to have it done ..... 02
- when I went into a hospital or  
was having a surgical procedure ..... 03
- as a requirement for life insurance ..... 04
- as a requirement for health insurance ..... 05
- I was donating blood ..... 06
- other (SPECIFY) ..... 87

82. a. When you had the AIDS test for infection with the AIDS virus, did anyone talk to you about the test? (MOST RECENT TEST)

- yes ..... 1 (ASK b)
- no ..... 2 (GO TO 83a)
- don't remember ..... 8 (GO TO 83a)

b. Who talked to you about it? (CIRCLE ALL THAT APPLY)

- |  | YES | NO |
|--|-----|----|
| a health professional .....              | 1   | 2  |
| someone from the insurance company ..... | 1   | 2  |
| other (SPECIFY) .....                    | 1   | 2  |
| don't remember .....                     | 8   | 8  |

c. What specific things did they tell you?

1. \_\_\_\_\_

2. \_\_\_\_\_

83. a. Did you want the results of the test?

- yes ..... 1 (GO TO 84a)
- no ..... 2 (ASK b)
- uncertain ..... 8 (GO TO 84a)

b. Why didn't you (*want the results of the test*)?

\_\_\_\_\_

84. a. Did you get the results of your test?

- yes ..... 1 (ASK b)
- no ..... 2 (GO TO 86)
- don't remember ..... 8 (GO TO 87)

b. Were the results given in person, by telephone, or in some other way?

in person ..... 1  
by telephone ..... 2  
by mail ..... 3  
Other (SPECIFY) ..... 7

85. a. When you received the results of your test, did anyone talk to you about the results?

yes ..... 1 (ASK b)  
no ..... 2 (GO TO 87)  
don't remember ..... 8 (GO TO 87)

b. Who talked with you about this? (CIRCLE ALL THAT APPLY)

	YES	NO
a health professional .....	1	2
someone from the insurance company .....	1	2
other (SPECIFY) .....	1	2
don't remember .....	8	8

c. What specific things did they say about the results?

1. \_\_\_\_\_

2. \_\_\_\_\_ (GO TO 87)

86. Why did you not get the results (*for your AIDS test*)?

1. \_\_\_\_\_

\_\_\_\_\_

87. **ASK ALL**

a. Now we are going to ask you some personal questions and we would appreciate your frank and honest response. Please remember your answers will be kept confidential. In the last two years have you had sex with at least one new partner?

yes ..... 1 (ASK b)  
no ..... 2 (GO TO 92)

b. In total, how many partners have you had in the last two years?

\_\_\_\_\_ partners

88. **ASK MALES ONLY**

(Were all/was) your partner(s) female or male, or (some female and some male)?

- female ..... 1 (GO TO 90)  
 male ..... 2 (GO TO 90)  
 some female and some male ..... 3 (GO TO 90)

89. **ASK FEMALES ONLY**

(Were all/was) your partner(s) male or female, or (some female and some male)?

- male ..... 1 (ASK 90)  
 female ..... 2 (GO TO 91)  
 some male and some female ..... 3 (ASK 90)

90. **ASK MALES AND FEMALES**

a. Did you and your partner(s) always use a condom, never use a condom, or sometimes use a condom?

- always ..... 1 (GO TO 91)  
 never ..... 2 (ASK b)  
 sometimes ..... 3 (ASK b)

b. Why didn't you and your partner(s) use a condom (*all of the time*)?

1. \_\_\_\_\_  
 2. \_\_\_\_\_

91. Now I am going to read a list of statements that might apply to you. Please tell me after I finish with all of the statements, if at least one would be true for you at any time since the early 1980's.  
 (READ SLOWLY)

- You have injected drugs or shot up, including steroids, during that time.
- You took part in anal sex.
- It is likely that any person with whom you had sex, had previously injected drugs, including steroids.

Were any of the statements I read true for you?

- yes to at least one ..... 1  
no to all of them ..... 2  
 refused to say ..... 0



**APPENDIX 3:**  
**ADDITIONAL TABLES**

### APPENDIX 3: ADDITIONAL TABLES

**Table 1**

**Area of Residence Differences in  
HIV/AIDS Risk (Alberta, 1992)**

Risky Sex	Area of Residence (Percent)				
	Calgary	Edmonton	Other City	Town/Village	Rural
No	88.5	91.1	91.9	82.1	82.9
Yes	11.5	8.9	8.1	17.9	17.1
Total	15.2	16.9	14.4	28.0	25.0
N = 1,277					

## APPENDIX 3

Table 2

### Knowledge of HIV Seroprevalence and HIV/AIDS

How Many of Those Who Now Have the AIDS Virus Are Now Sick with AIDS?							
		<u>Answer</u>					
How Many of Those Who Have the AIDS Virus Will Eventually Get Sick with AIDS?		Worst	Wrong	D.K.	O.K.	Best	Total
		<i>Percent</i>					
<u>Answer</u>		(p = .000)					
	Worst	3.4	0.8	2.8	2.3	18.2	3.9
	Wrong	8.5	12.3	7.6	27.9	42.6	20.6
	D.K.	2.2	3.1	76.7	2.4	9.3	18.9
	O.K.	53.8	34.8	8.2	18.5	9.0	20.9
	Best	32.2	49.0	4.7	48.9	20.9	35.6
	Total	5.1	24.0	21.0	38.5	11.5	N=1,242

Note: Percentaging within columns is arbitrary.

## APPENDIX 3

Table 3

### Self-Reported High Risk Status and Risky Sexual Behaviour

	Risky Sex (Percent)		Total
	Yes	No	
High Risk	33.2	66.8	3.1
Not High Risk	14.4	85.6	96.9
Total% (p = .003)	15.0	85.0	n=1,216
N	181	1034	

Note: Table is percentaged across. Compare down.





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